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ABSTRACT

This study was conducted to investigate attitudes toward physical activity and self-esteem of students (N=82) in grades three through five. The independent variables were gender, grade placement, and physical fitness. The dependent variables were scores from the Grade 3 Children's Attitudes Toward Physical Activity, the Revised Children's Attitudes Toward Physical Activity Inventory (CATPA), and the school form of the Coopersmith Self-Esteem Inventory (CSEI). A total of 91 comparisons were made. Three of the 39 main effects comparisons and 4 of the 52 interaction comparisons were statistically significant at the .05 level. The results of the study revealed that girls reported a more positive attitude on the CAPTA Aesthetic subdomain than did boys. Fourth and fifth graders reported high Social Self-Peer scores than did third graders, and fourth graders reported higher Home-Parent scores on the CSEI than did third and fifth graders. Interactions were found among gender, grade placement, and physical fitness for the General Self, Social Self-Peers, and Total Self subscales of the CSEI. Interactions also were found between gender and grade placement for Home-Parents. No association was found between physical fitness and attitudes toward physical activity and no association was found between grade placement and attitudes toward physical activity. The appendixes include instruction sheets for the survey instruments. (Contains 55 references.) (NB)

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CHILDREN'S ATTITUDES TOWARD PHYSICAL ACTIVITY
AND SELF-ESTEEM

being

A Thesis Presented to the Graduate Faculty of
the Fort Hays State University in
Partial Fulfillment of the Requirements for
the Degree of Master of Science

by

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for the Degree of Master of Science.

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The author dedicates this thesis to his mother, Mrs. Marge Ewy, for her love and encouragement.

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Abstract

The purpose of the researcher was to investigate attitudes toward physical activity and self-esteem of elementary school children. The independent variables investigated were gender, grade placement, and physical fitness. The dependent variables were scores from the Grade 3 Children's Attitudes Toward Physical Activity, the Revised Children's Attitudes Toward Physical Activity Inventory (CATPA), and the school form of the Coopersmith Self-Esteem Inventory (CSEI). The sample consisted of 82 students in grades 3-5. Two composite null hypotheses were tested at the .05 level employing a three-way analysis of variance (general linear model).

A total of 91 comparisons were made. Of the 91 comparisons, 39 were for main effects and 52 were for interactions. Of the 39 for main effects, 3 were statistically significant at the .05 level. The following main effects were statistically significant.

1. the independent variable gender for the dependent variable Aesthetic;
2. the independent variable grade placement for the dependent variable Social Self-Peers; and
3. the independent variable grade placement for the dependent variable Home-Parents.

Of the 52 interactions, 4 were statistically significant at the .05 level. The following interactions were statistically significant:

1. the interaction among gender, grade placement, and physical fitness for the dependent variable General Self;
2. the interaction among gender, grade placement, and physical fitness for the dependent variable Social Self-Peers;
3. the interaction between gender and grade placement for the dependent variable Home-Parents; and
4. the interaction among gender, grade placement, and physical fitness for the dependent variable Total Self.

The results of the present study appeared to support the following generalizations:

1. girls reported a more positive attitude toward Aesthetic than boys;
2. fourth and fifth graders reported higher Social Self-Peer scores than third graders;
3. fourth and fifth graders reported higher Home-Parent scores than third and fifth graders;
4. the interactions among gender, grade placement, and physical fitness for General Self; among gender, grade placement, and physical fitnessx

x

for Social Self-Peers; between gender and grade placement for Home-Parents; and among gender, grade placement, and physical fitness for Total Self;

5. no association between physical fitness and attitudes toward physical activity; and
6. no association between grade placement and attitudes toward physical activity.

Introduction

Overview

Much research has been conducted in the area of attitudes toward physical activity among adolescents and adults (Alderman, 1970; Aicinena, 1991; Straub & Felock, 1974; Kenyon, 1968a; & 1968b). Self-esteem had been thoroughly researched for these two populations. However, the area that have received little attention have been attitudes toward activity among elementary school children (Politino & Smith, 1989).

It has been frequently assumed that children have an innate interest in physical activity. However, a major concern facing health-care specialists is the increasing number of children choosing a sedentary lifestyle, health problems such as obesity, asthma, hypertension, and coronary heart disease has been contributed to habitual inactivity (DeMarco & Sidney, 1990).

Researchers (DeMarco & Sidney, 1990; Simons-Morton, O'Hara, Simons-Morton, & Parcel, 1987; Carlson, 1990) indicated physical activity plays a role in reducing coronary heart disease risk factors, anxiety, depression, and tension. Physical training in children results in increased self-esteem and perceived physical competence

which enables children to cope with mental stress (Demarco & Sidney, 1990; Carlson, 1990).

Status of Children's Physical Fitness

One of the most popular trend in the United States over the last decade has been in the area of youth physical fitness (Virgilio & Berenson, 1988). However, results of the National Children and Youth Fitness Studies (Ross & Gilbert, 1985 & 1987) indicated that children appear to be fatter than they were 10 to 15 years ago. According to Vogel (1991), American children are fatter, less fit, and less healthy than they were 10 years ago. Ross and Gilbert (1987) indicated children have skinfold measurements, 2-4 mm greater compared to their peers of the 1960's. Vogel (1991) stated the prevalence of obesity has increased 54% among the 6 to 11 year old population for the years 1963 to 1980. Corbin and Pangrazi (1992) revealed similar information on a study conducted with 4,729 elementary students. According to Blair (1989), 30-35% of the school age population are at risk because of low fitness. Finally in 1980, the President's Council on Physical Fitness reported that 43% of the 6 to 17 year old population can pass the Presidential Physical Fitness Test. Today, only 32% of American children can pass (Vogel, 1991).

Striving to promote positive attitudes toward physical activity is thought to lead to participation in

activities that will keep one physically fit. Furthermore, improving physical fitness levels, which will affect overall functioning, may enhance a child's self-esteem (Carlson, 1979).

Attitudes: Definitions and Measurements

Attitudes have been studied by social psychologists for over a century. Allport (1935) defined attitudes as a mental state of readiness for action. Kenyon (1968b) stated that an attitude is a nonobservable behavioral disposition reflecting an intensity of feeling toward a particular object.

Attitudes have only been measured by verbal statements and indirect inferences from the individual's behavior (Simon, 1973). An individual's action may or may not indicate his real attitude since both public and private attitudes are possible for a single individual. However, scales have been developed to measure various dimensions of attitudes.

Kenyon developed an inventory assessing attitudes toward physical activity. This inventory was primarily used for assessing attitudes of different athletic groups, and investigating attitudes toward physical activity compared to socioeconomic status, personality factors, religious identification, and skill performance (Schutz, Smoll, Carre, & Mosher, 1985).

The target Kenyon's inventory on Attitudes Toward Physical Activity has been young adults. However, basic attitudes of children are formed during the period of middle childhood (Ausebel, Sullivan, & Ives, 1980). Recognizing the need for studying attitudes toward physical activity of elementary school children, Simon (1973) modified Kenyon's inventory for use with elementary school children, grades 4 through 6.

Kenyon (1968a) identified six subdomains on his Attitudes Toward Physical Activity Inventory; physical activity as a social experience, as health and fitness, as the pursuit of vertigo, as an aesthetic experience, as catharsis, and as an ascetic experience. Each subdomain is quantified through the use of a 7 point scale for the 8 bipolar adjective pairs. Simon's (1973) version closely follows Kenyon's content and scale but made substantial changes in the wording to make the inventory appropriate for grades 4 through 6.

Self-Esteem

Much attention has been given to the construct self-esteem although no standard operational definition exists. Chiu (1988) referred to self-esteem as the evaluative component of the self-concept. Briggs (1970) defined self-esteem as "how a person feels about himself" (p. 3). A child's success or failure may be based on his/her self-

esteem and likewise, self-esteem may be based on the result of success and failure. Coopersmith (1981) defined self-esteem as "an expression of approval or disapproval, indicating the extent to which a person believes him or herself competent, successful, significant, and worthy" (p. 5). Coopersmith (1967) indicated that individuals respected themselves and considered themselves worthy when possessing high self-esteem. Those with low self-esteem lacked self-respect, reported feelings of guilt, shame, or depression and believed their achievements were of little importance. According to Crandall (1973, as cited by Chiu, 1988) self-esteem is defined as liking and respecting oneself. According to Kawah (1982, p. 301) self-esteem refers "to the evaluative component of the self-concept and is conceptualized as a rather general feeling of self worth vs. feelings of self-depreciation.

Self-concept, as it is generally used in the professional literature, is a group of feelings and cognitive processes which are inferred from observed or manifest behavior. By way of a formal definition, self-concept is the person's total appraisal of his appearance, background and origins, abilities and resources, attitudes and feelings which culminate as a directing force in behavior. (LaBenne & Greene, 1969, p. 10)

A study was conducted by Coopersmith (1959) to develop measures distinguishing between subjects high and low in self-esteem and individuals exhibiting reality-based and defensive responses. From this experimental procedure, a self-esteem inventory and a self-esteem behavior rating form was developed and administered to 49 females and 53 males, ages 10 to 12 years. Samples of 4 groups of 12 children were selected on the basis of the self-esteem inventory scores and by behavioral evaluations administered by the teachers and administrators of the children involved.

Coopersmith (1959) used information on a constellation of experiential and motivational variables to determine whether the samples displayed significantly different patterns of personality, academic, and social success and failure. Results of the study indicated that children who had more experiences of success self-evaluated themselves higher than those with less experiences of success. Also, there appeared to be agreement between self-esteem and the behavioral evaluations for the majority of the children.

Attitudes Toward Physical Activity: Studies

Alderman (1970) examined attitudes toward physical activity of a total of 136 male and female champion athletes. Kenyon's Attitude Toward Physical Activity Inventory was administered to each athlete representing 10

different sports events. Results of the study indicated that males and females were similar in their attitudes. The strongest attitude the athletes possessed were toward an aesthetic experience [for the beauty in movement (43.24)] while the ascetic experience [for the long hard training (29.38)] held the least meaning for the total group. The subjects in this study value physical activity for the beauty and graceful movements rather than the long training.

Straub and Felock (1974) compared attitudes toward physical activity of 80 delinquent and nondelinquent junior high school age girls. Samples were drawn from a rural school (N=30); a large urban school (N=30); and a correctional institution located in New York State. All subjects were administered Kenyon's Attitude Toward Physical Activity Inventory under controlled classroom conditions. The investigators collected data on age and weight on a demographic questionnaire. According to the study, girls from various settings differed significantly in their attitudes toward physical activity as a social experience; (city = 37.10); (rural = 33.97), and (institution = 31.40). Further analysis revealed that (1) girls in rural schools differed significantly from those in city schools in attitudes, (2) attitudes of girls in the rural school did not differ significantly from the girls in

correctional institution, and (3) girls in the large urban school differed significantly from those in correctional institutions in attitudes.

Associations Between Physical Fitness and Self-Esteem

Christian (1969) conducted a study of 189 male college students to determine the relationships between physical fitness and self-concept. The Tennessee Self-Concept Scale was used to evaluate self-concept while four physical efficiency tests were used to measure physical fitness. Following the administration of the two assessments, the subjects were divided into 3 groups; 1) control group (receiving no special instruction in physical activity), 2) an experimental group (taking part in a physical fitness program and being informed of physical fitness scores), and 3) the same as (2) but not given reports regarding their scores in physical fitness. Following the training program of 6 weeks, the Tennessee Self-Concept Scale and the physical fitness battery were administered to the groups. Results of the study indicated no significant differences between physical fitness and self-concept among the group of subjects selected. Physical fitness did improve, however among all 3 groups.

In a study including a total of 15 (male and female) freshmen, Leonardson and Gargiulo (1978) examined the relationship between self-concept and physical fitness.

Students were administered a pretest and posttest with a supervised jogging program serving as the treatment for 10 weeks. Physical fitness was determined by the number of laps completed during a 12 minute run while self-concept was assessed by a semantic differential scale. The findings of the study indicated no significant difference between pretest and posttest measures on self-concept. Perceived physical fitness and self-concept did correlate significantly on pretest and posttest, .53 and .57. According to this study perceived physical fitness is a viable aspect of self-concept.

Teagardin (1983) concluded that self-concept in girls was not affected by physical fitness or motor abilities. She compared self-concept among 655 females in fifth, seventh, and tenth grade in relation to their physical fitness, motor ability, and overall physical performance. Students were administered the Texas Physical Fitness--Motor Ability Test to measure the physical aspect of the study and The Bills Attitude Inventory to assess self-concept. Students who scored in the top 25 percent of the fitness and motor test were classified as high in physical fitness and motor ability while those who scored in the lower 25 percent were placed in the low classification group. No significant difference was identified by Teagardin when comparing self-concept among

students to their physical performance. Based on the results of this study, it was concluded that self-concept in girls was not affected by physical fitness, motor ability, or grade level.

In a study including 97 elementary school children in grades 1 through 6, Folsom-Meek (1991) examined which attribute (age, height, weight, body mass index) and physical fitness variable (9-minute endurance run, sit-up, sit and reach, body composition) best predict self-concept scores. Subjects were administered The American Alliance of Health, Physical Education, and Recreation Health Related Fitness Test and the Martinek-Zaichkowsky Self-Concept Scale for Children. According to Folsom-Meek, body composition was significantly and inversely related to self-concept ($-.33$) while weight was the only variable contributing significantly to self-concept scores.

Doan and Scherman (1987) reviewed current literature concerning the effects physical fitness had on various measures of personality. Personality was defined as consisting of self-concept, mood, anxiety, and depression. The research was classified in three categories; pre-experimental studies, quasi-experimental, and experimental. Twenty-four pre-experimental studies were reviewed. A significant improvement on psychological measures was reported in 66% of the studies. Twelve percent of the

studies showed partial improvement while the remaining 22 percent resulted in no change. A total of 24 quasi-experimental studies were reviewed. Sixty-seven percent of the studies indicated significant improvement, 8% reported partial changes while no change was observed in 25 percent of the studies. Concerning experimental research, 14 studies were located with improvements being reported in 50 percent of the studies. Partial improvement was observed in 14 percent and 36 percent of the studies reviewed indicated no change. Results of the literature review by Doan and Scherman support the benefits of physical fitness on psychological variables.

Martinek, Cheffers, and Zaichkowsky (1978) investigated the effect physical activity had on skill development and self-esteem of 344 grade 1 through 5 bi-ethnic (Afro-American and Caucasian) school children attending Boston public attendance centers. Students were placed in treatment and control groups. Following a 10-week formal physical activity program for the treated group, subjects were administered the Schilling Body Coordination Test and the Martinek-Zaichkowsky Self-Concept Scale for Children. For motor skill development, the researchers reported significant differences between the means of treated (168.78) and control groups (162.66). Self-concept scores were numerically higher for those who participated

in physical activity programs (22.79) than the control group (21.82). However, the results indicated significantly lower self-concept scores for students in grades 3, 4, and 5 than grade 2. Martinek et al. (1978) reported non-statistically significant correlation coefficients between self-concept and motor development.

Petrakis and Bahls (1991) examined whether an elementary physical education program would affect self-concepts of children. Two parochial schools were included in the study, one having a physical education program while the other did not have one. The Martinek-Zaichkowsky Self-Concept Scale was administered to the students. Pretest and posttest data were collected from both schools. Results of the study indicated that participation in a physical education program did not enhance self-concept. Schools with a physical education program had a pretest and posttest average mean score of 21.83 and 21.17, respectively. Schools without a physical education program had a pretest and posttest average mean score of 21.66 and 21.69, respectively. Furthermore, a decreasing trend in self-concept was observed starting with children in second grade.

Associations Among Attitudes Toward Physical Activity, Self-Esteem and Physical Fitness

Neale, Sonstroem, and Metz (1969) established high-low fitness groups for 3 age classifications (12-13, 14-15, and 16-17) of 165 adolescent boys enrolled in physical education classes in two high schools in Minneapolis, Minnesota. The authors examined the relationship between physical fitness, self-esteem, level of participation in physical activity, and attitudes toward physical activity. The subjects were administered the AAHPERD Youth Fitness Test, a 10-item self-esteem inventory, the Physical Activity Attitude Inventory, and a questionnaire concerning an estimation of voluntary participation in physical activity. The authors reported no significant correlation coefficients between self-esteem and measures of voluntary participation or attitudes toward physical activity. The authors failed to provide evidence of a relationship between physical fitness and self-esteem. Furthermore, the researchers failed to find support that a relationship between physical fitness and extent of voluntary physical activity participation exists. The study did however, provide evidence that participation in physical activity is positively related to attitudes toward physical activity.

Routon and Sherrill (1989) examined attitudes toward physical education and self-concept of 50 asthmatic and 741

non-asthmatic children in Grades 4-6. Analysis of variance indicated no significant differences on measures of attitudes toward physical education and self-concept. Furthermore, physical education was ranked either first or second by 50% and 47% of asthmatic and non-asthmatic children, respectively. Therefore, physical fitness is likely to be important to children regardless of medical condition.

Politino and Smith (1989) conducted a study investigating the relationship between attitudes toward physical activity, gender and self-concept. The Children's Attitude Inventory Toward Physical Activity (CATPA) and the Piers-Harris Self-Concept Scale were administered to 80 emotionally disturbed and 390 normal children ranging from 8 to 13 years of age. The results indicated that attitudes toward physical activity and self-concept were not associated for normal children but a significant difference was found among the emotionally disturbed group. The emotionally disturbed children had a more negative attitude toward physical activity and a lower self-concept than the normal population. Regarding the CATPA subscales toward gender, there was a significant difference between normal boys and girls. On the subscale of beauty in human movement and as an aesthetic experience, females scored

significantly higher than the males. Males had a higher score on release of tension and vertigo than the females.

Sherrill, Holguin, and Caywood (1989) reported the results of examining differences in attitudes toward physical education and self-concept in relation to fitness of 393 fourth and fifth graders in Plano, Texas. By administering the CATPA, Game of Pairs, the Children's Self-Concept Scale, and the Texas Physical Fitness Test, findings indicated that higher fit girls had higher positive attitude scores than higher fit boys and lower fit boys and girls with mean scores of 286.37, 274.42, 258.10, and 276.94 respectively.

Hardin (1991) examined the relationship between fitness levels of college-aged students and their attitudes toward physical activity. Subjects included 130 students enrolled in fitness concepts courses. Subjects were administered a personal data questionnaire, a Revised Attitude Toward Physical Activity Inventory, AAHPERD's Health Related Physical Fitness Test, and the Physical Activity Readiness Questionnaire. Results of the study indicated that college-aged students with high fitness scores tended to have positive attitudes toward physical activity. Those who participated in moderate physical activities were found to have a more positive attitude than those who participated in light physical activities.

Hardin did not, however, report any significant differences in physical fitness and attitudes based on gender or college classification. Therefore, maturation may be associated with the experience of physical fitness and attitudes in a conflicted way.

A review of the related literature indicated that very little research pertaining to the association among attitudes toward physical activity, levels of physical fitness, and self-esteem had been undertaken. Results of studies regarding attitudes toward physical activity and self-esteem are inconclusive. However, numerous studies have been conducted pertaining to self-esteem as well as physical fitness. As a result, self-esteem, gender, and maturation are emerging as important contributors to attitudes toward physical activity and physical fitness.

Statement of the Problem

The purpose of the researcher was to investigate attitudes toward physical activity and self-esteem in children in grades 3 through 5.

Rationale and Importance of the Research

One view of counseling is the multi-modal model (Carlson, 1982). This views the child as a total process or being and evaluating and treating the physical, psychological, intellectual, social, emotional, and environmental processes. Intervening on the physical

level, for example, also affects the psychological level. Counselors need to use various techniques in order to help each individual reach his or her wellness lifestyle (Carlson, 1979).

The results of the present study could be of utility to a number of staff at the elementary school such as classroom teachers, administrators, physical educators, and counselors. This study is also important since it contributes to the limited research concerning attitudes toward physical activity, self-esteem, and physical fitness.

The results from the present study provided information pertaining to the following questions:

1. Is there an association between physical fitness and attitudes toward physical activity?
2. Is there an association between gender and attitudes toward physical activity?
3. Is there an association between grade placement and attitudes toward physical activity?
- 4.. Is there an association between physical fitness and self-esteem?
5. Is there an association between gender and self-esteem?
6. Is there an association between grade placement and self-esteem?

Composite Null Hypotheses

Each null hypothesis was tested at the .05 level of significance.

1. The differences among mean children's attitudes toward physical activity scores for elementary school children according to gender, grade placement, and physical fitness will not be statistically significant.

2. The differences among mean self-esteem scores for elementary school children according to gender, grade placement, and physical fitness will not be statistically significant.

Independent Variables and Rationale

The following independent variables were investigated: gender, grade placement, and physical fitness. These variables were studied because little research was found pertaining to the variables and the results found were inconclusive.

Definition of Variables

Independent Variables

The following independent variables were investigated:
gender--two levels:

level 1. male, and

level 2. female;

grade placement--three levels:

level 1. third,

- level 2. fourth, and
 - level 3. fifth,
- physical fitness--two levels:
- level 1. fit, and
 - level 2. nonfit.

Dependent Variables

For the 3rd grade, scores from the following scales of the Grade 3 Children's Attitudes Toward Physical Activity were employed as a dependent variable:

1. Physical Activity for Social Growth [(social growth), possible scores 5-25];
2. Physical Activity for Health and Fitness [(health and fitness: enjoyment), possible scores 5-25];
3. Physical Activity as a Thrill but Involving Some Risk [(vertigo), possible scores 5-25];
4. Physical Activity to Continue Social Relations [(social continuation), possible scores 5-25]; and
5. Physical Activity as the Beauty in Movement [(aesthetic), possible scores 5-25].

For 4th and 5th grades, scores from the following scales of the Children's Attitudes Toward Physical Activity were employed as a dependent variable:

1. Physical Activity for Social Growth [(social growth), possible scores 5-25];

2. Physical Activity for Health and Fitness [(health and fitness: value and enjoyment), possible scores 5-25];
3. Physical Activity as a Thrill but Involving Some Risk [(vertigo), possible scores 5-25];
4. Physical Activity to Continue Social Relations (social continuation), possible scores 5-25];
5. Physical Activity as the Beauty in Human Movement [(aesthetic), possible scores 5-25];
6. Physical Activity for the Release of Tension [(catharsis), possible scores 5-25]; and
7. Physical Activity as Long and Hard Training [(ascetic), possible scores 5-25].

For 3rd, 4th, and 5th grades, scores from the following scales of the Coopersmith Self-Esteem Inventory were employed as dependent variables:

1. General Self, (possible scores 0-52);
2. Social Self-Peers, (possible scores 0-16);
3. Home-Parents, (possible scores 0-16);
4. School-Academic, (possible scores 0-16); and
5. Total Self-Score, (possible scores 0-100).

Limitations

The following might have affected the results of the present study:

- 1) the sample was not random,

- 2) all subjects were from one school in northwest Kansas, and
- 3) many of the data were self-reported.

Methodology

Setting

The study was conducted at an intermediate school in northwest Kansas. This school is located in a town with a population of approximately 500 people. The students from this school come from 5 towns which make up the school district. The school is located in a farming community with other sources of income being gas, oil, and businesses, including a major farm implement dealership and a helium plant. Each grade level included two classroom sections.

Subjects

The sample consisted of 30 third graders, 12 boys and 18 girls; 23 fourth graders, 8 boys and 15 girls; and 30 fifth graders, 16 boys and 14 girls. All third graders present were administered the Grade 3 Children's Attitude Toward Physical Activity, the Coopersmith Self-Esteem Inventory (CSEI), and the Physical Best Physical Fitness Test. All fourth and fifth graders present were administered the Children's Attitude Toward Physical Activity, the CSEI, and the Physical Best Physical Fitness Test.

Instruments

Four instruments were employed. The instruments were the Grade 3 Children's Attitude Toward Physical Activity, the Children's Attitude Toward Physical Activity (CATPA), the school form of the Coopersmith Self-Esteem Inventory (CSEI), and the Physical Best Fitness Test.

Grade 3 CATPA. The Grade 3 CATPA was developed as a modification of the revised CATPA (Schutz et al., 1985). This instrument was developed because of the limited reading abilities of third graders.

Three basic changes were made from the revised instrument. The first change was the deletion of the semantic differential scale and adding "5 picture happy-faces." Cozby (1981), through the use of a pilot study, indicated that third grade students could easily understand this type of nonverbal scale. The subdomains of Catharsis and Ascetic were deleted from the instrument. Schutz et al. (1985) were concerned that these concepts were uncomprehendable to third grade students. Finally, the subdomains were presented in a question format. A study of 1,091 third grade students indicated that questions were understood with 1% of the students selecting "do not understand."

Reliability and validity of the grade 3 inventory was reported by Schutz et al. (1985). A test-retest

reliability coefficient of .97 using a 3 picture happy face format was reported by Mancini, Cheffers, Zaichkowsky, and Martinek (1975, as cited by Schutz et al., 1985) with a sample of 93 children in grades 1 through 6. Convergent validity was established from a sample of 61 third grade students with the correlation coefficient of .98 being reported for third grade females for the Health and Fitness sub-domain. Each subdomain score has a range of 1 through 5. As with the revised CATPA, Schutz et al. (1985) stated that under no circumstances should the subdomain scores be totaled to derive a composite attitude score since the subdomains represent independent components of attitudes toward physical activity.

Children's Attitude Toward Physical Activity (CATPA).

To assess attitudes toward physical activity of children in grades four and five, the revised CATPA by Schutz et al. (1985) was employed. The CATPA (Schutz et al., 1985) is a paper-pencil self-reporting questionnaire designed to measure the individual's feelings about taking part in physical activity. This inventory devised from the Simon and Smoll's (1974) version, is recommended for use with children grades 4 through 6. The CATPA consists of 7 items, each with 5 bipolar adjective pairs on a semantic differential scale. The individual completing the questionnaire is to read each idea and fill in how he/she

feels about all the word pairs. A 5-point Likert type scale is used when scoring the items with 5 being associated with the positive adjective and 1 with the negative. The instrument contains 7 subdomains: Social Growth, Social Continuation, Health and Fitness, Vertigo, Aesthetic, Catharsis, and Ascetic. The scores are added on each subdomain for a maximum total of 25 with the exception of Health and Fitness. The Health and Fitness domain consists of 2 intersubdomains; value and enjoyment with maximum points of 10 and 15, respectively. For intersubdomain comparisons, these two Health and Fitness components should be rescaled to a value out of 25 by multiplying the scores by 2.5 and 1.67. It is recommended by the developers of the instrument that scores not be totaled to derive a composite attitude score since the subdomains represent independent components of attitudes toward physical activity.

The original development of the CATPA began with recognizing the necessity for studying attitudes toward physical activity of elementary school children (Schutz et al., 1985; Simon & Smoll, 1974). The revision was based on a study conducted by Wood (1979) which indicated three of the original word pairs (bitter-sweet, dirty-clean, steady-nervous) were not well understood by the subjects. These three word pairs were deleted from the current instrument.

Also, the original 7-point scale was replaced by a 5-point scale.

Reliability coefficients for the subdomain, employing Cronbach Alpha, were reported ranging from .80 to .90 (Schutz et al., 1985, Schutz, Smoll, & Wood, 1981; & Smoll & Schutz, 1980). A test-retest reliability coefficient (6 weeks) of approximately .60 was reported by Simon and Smoll (1974).

There is little evidence of predictive validity, although studies cited in the literature did support claim for convergent validity. Smoll and Schutz (1980) reported a strong linear correlation between the CATPA domain scores and involvement in activity by boys and girls in grades 4 through 6. Tolson and Chevrette (1974, as cited by Schutz et al., 1985) reported significant increases in attitudes toward physical activity (ATPA) in four of the six domains following daily physical education programs for 6 weeks. Meyers, Pendergast, and Debarcy (1978, as cited by Schutz et al., 1985), reported a significant correlation coefficient ($r=.43$) between the Health and Fitness subdomain score and VO_2 max [the greatest amount of oxygen utilized by the cells during maximum exercise per unit of time (McGlynn, 1987)] in adolescent girls. Concurrent validity has been established by Schutz and Smoll (1977).

Coopersmith Self-Esteem Inventory (CSEI). The Coopersmith Self-Esteem Inventory (CSEI) was employed to assess self-esteem (Coopersmith, 1967, 1981). A paper-and-pencil self reporting instrument (Coopersmith, 1981), the CSEI was designed to measure evaluative attitudes toward the self in social, academic, family, and personal areas of experience. The school form of the CSEI was designed for children and adolescents ages 8 through 15. Fifty self-esteem items and the Lie scale consisting of 8 items are included in the CSEI.

The respondents completing the instrument are to read each short statement and mark the box under 1 of 2 forced choices; "like me" or "unlike me." One point is given if the answer matches the key. The total self-score is arrived by summing the number of items which have responses that matched the key, multiplied by the constant of 2 with a maximum of 100. Summing the 8 items of the Lie Scale will obtain that total score with a higher score suggesting student defensiveness. The school form consists of 4 subscales: General Self (26 items); Social Self-Peers (8 items); Home-Parents (8 items); and School-Academic (8 items). These 4 subscales yield a separate score as well as a Total Self-Score (50 items).

Coopersmith (1981) cited numerous studies on reliability. A study of CSEI internal consistency was

reported by Kimball (1972, as cited by Coopersmith, 1981). the study included 7600 school children in grades 4 through 8. Kuder-Richardson reliability coefficients (KR_{20}) ranged from .87 to .92. Spatz and Johnston (1973) reported .81 for grade 5, .86 for grade 9, and .80 for grade 12 with over 600 students. Fullerton (1972, as cited by Coopersmith, 1981) administered the SEI to 104 students in grades 5 and 6. A split-half reliability coefficient of .87 was reported by the researcher.

The manual contains validity data based on numerous studies. Kokenes (1974) administered the CSEI to approximately 7600 school children in grades 4 through 8. Construct validity of the subscales was confirmed by Kokenes as measuring sources of self-esteem. Earlier, Kimbal (1972, as cited by Coopersmith, 1981) conducted a similar study with 7600 school children.

Simon and Simon (1975, as cited by Coopersmith, 1981) ascertained the correlation coefficient between the CSEI and SRA scores of 87 children in grade 4. They reported a concurrent validity correlation coefficient of .33. Donaldson (1974, as cited by Coopersmith, 1981) indicated the CSEI is a "fair predictor of reading achievement." A factor analysis conducted by Kokenes (1973, as cited by Coopersmith, 1981) of 7600 children indicated that the bipolar factors of success and failure were related to the

school-academic and social self-peers subscales. The factors good-poor were related to the home-parents subscale.

Physical best. To assess physical fitness, AAHPERD's Physical Best (1988) was employed. A comprehensive fitness education and assessment, Physical Best (McSwegin, Pemberton, Petray, & Going, 1989; & AAHPERD, 1988) was designed to measure the health-related component of physical fitness; aerobic endurance, body composition, flexibility, and muscular strength and endurance. This assessment was also designed to motivate children and adolescents to participate in physical activity and develop their personal best. Physical Best includes three components; health-related assessment, an educational component, and an award system. A criterion-referenced assessment, Physical Best replaces AAHPERD's Youth Fitness Test, Health-Related Fitness Test, and the President's Council Physical Fitness Test (McSwegin, Pemberton, Petray, & Going, 1989).

The one-mile walk/run is used to measure aerobic endurance. Aerobic endurance is the ability of the heart, blood, and respiratory system to supply fuel, especially oxygen, to the muscles during sustained activity" (Corbin & Lindsey, 1988, p. 10). The objective of this test item is to move at the fastest pace that can be sustained

throughout the entire distance (AAHPERD, 1988; & McSwegin et al., 1989). This is to be conducted on a track or any other flat surface, measured area. The one-mile walk/run is scored in minutes and seconds.

Body composition, according to Corbin and Lindsey (1988, p. 9), is "the relative percentage of muscles, fat, bone, and other tissue of which the body is composed."

Body composition is measured by skinfold measurements of the triceps and calf (AAHPERD, 1988; & McSwegin et al., 1989). Using skinfold calipers, triceps are measured on the right upper arm, midway between the elbow and shoulder. Calf skinfold measurements are taken on the medial side of the right lower leg at the largest part of the calf girth. Three consecutive measurements need to be taken at each site, recording the median of the three scores. Summing the triceps and calf measurements will produce the final score.

An optional measure to estimating body composition is measuring standing height and body weight and computing the body mass index (BMI). Widely used, the BMI is at times difficult to interpret since it is possible for two individuals of equal height and weight to have differing amounts of fat and lean tissue. McSwegin et al. (1989) indicated that in recent investigations, changes in skinfold measurements and BMI were shown to be moderately correlated

and are useful when skinfolds cannot be used. BMI is defined as the ratio of body weight (measured in kilograms) to the square of standing height (measured in meters).

The sit and reach is used to measure flexibility. Flexibility is "range of motion available in a joint" (Corbin & Lindsey, 1988, p. 10). This test item measures the flexibility of the lower back and hamstring muscles (AAHPERD, 1988; McSwegin et al., 1989). A specially constructed sit and reach box is used to measure this component. Students are instructed to remove their shoes and sit with knee's fully extended; heels approximately shoulder width apart and feet flat against the end board of the test apparatus. With hands on top of another, students should extend arms forward and lean along the ruler as far as possible. Four trails are permitted with the final score being the most distant point reached on the fourth trial.

"The ability to exert an external force or to lift a heavy weight" is defined as muscular strength (Corbin & Lindsey, 1988, p. 10). Pull-ups are used to assess this component (AAHPERD, 1988; McSwegin et al., 1989). This test item, which measures arm and shoulder girdle strength, is performed by students hanging from a bar using an overhand grip. From this position, the body is raised with

the arms until the chin is positioned over the bar. Pull-ups are scored by the number correctly executed.

The modified sit-up is used to assess muscular endurance. Muscular endurance, according to Corbin and Lindsey (1988, p. 10), is "the ability of the muscles to repeatedly exert themselves." The modified sit-up is used to measure abdominal strength and endurance, and is performed on a mat or any comfortable surface (AAHPERD, 1988; McSwegin et al., 1989). Students lie on their backs with knees flexed and feet on the floor. Arms are crossed on the chest with the hands on opposite shoulders. On a command, students curl to a sitting position maintaining arm contact with the chest. After touching the elbows to the thighs, students return to the down position until the midback makes contact with the surface. The modified sit-up is scored by the number executed correctly in 60 seconds.

Scores from each test item were compared with health-related standards. These standards (McSwegin et al., 1989) indicated fitness ranges in which a student should fall in order to maintain a level of health that will help prevent certain temporary and lifetime health problems. Students who met 4 of 5 fitness standards were considered fit and those who met 3 or less standards were considered nonfit.

Test-retest reliability coefficient of the test items were measured by Safrit and Wood (1987, as cited by Harris-Dawson, 1991) ranging from .76 to .84. Forbus (1990) reported test-retest reliability coefficients of the following test items; triceps and calf skinfold, .97 to .99; one mile walk/run, .80 to .97; sit and reach, .68 to .96; and sit-ups, .76 to .92. Pate (1991) reported reliability coefficients for the pull-ups typically exceeding .80.

Study Design

A status survey factorial design with pregroupings and post hoc groups was employed. The independent variables investigated were: gender, grade placement, and physical fitness. The dependent variables were subscales from the following instruments: Children's Attitudes Toward Physical Activity and Coopersmith Self-Esteem Inventory.

Two composite null hypotheses were tested employing a three-way analysis of variance (general linear model). The following designs were used with the two null hypotheses:

1. composite null hypothesis number one, $2 \times 3 \times 2$ factorial design, and
2. composite null hypothesis number two, $2 \times 3 \times 2$ factorial design.

McMillan and Schumacher (1989) addressed 10 basic threats to internal validity. The following 10 threats were

dealt with by the present researcher in the following ways.

1. history--did not apply because the present study was status survey;
2. selection--all children present were administered the inventories and included in the study;
3. statistical regression--did not apply because there were no extreme subjects;
4. testing--did not apply because the present study was status survey;
5. instrumentation--id not apply because the present study was status survey;
6. mortality--did not apply because the present study was status survey;
7. maturation--did not apply because the present study was status survey;
8. diffusion of treatment--did not apply because the present study was status survey;
9. experimenter bias--data were collected by the researcher employing standard procedures (Appendix A or Appendix B) and no treatment was administered; and
10. statistical conclusions--two mathematic assumptions were violated (random sampling and equal number of subjects in cells). The lack of equal number in cells was corrected for by using the general linear model. The

present research did not project beyond the statistical analysis employed.

McMillan and Schumacher (1989) addressed two threats to external validity. The two threats were dealt with in the following ways:

1. Population external validity--random sampling was not feasible, therefore, the results should be generalized only to children in similar schools; and,
2. Ecological external validity--no treatment was implemented and the instruments were administered by the researcher according to standard accepted procedures.

Data Collecting Procedures

The subjects were obtained through permission of the principal at the intermediate school. The present researcher set up a time with each classroom teacher in which he could administer the CATPA or Grade 3 CATPA and the CSEI. The Physical Best Fitness Test was administered to each student by the researcher in his physical education classes. The researcher read a prepared instruction sheet (Appendix A or Appendix B) to all students to maintain consistency. The copies of the instrument were passed out and then collected after the subjects finished. The

information was coded and analyzed in the Computing Center at Fort Hays State University.

Research Procedures

The researcher implemented the following operations in the process of conducting the study:

1. research topic was selected;
2. literature search was made (Topcat, ERIC, Physical Education Index, Dissertation Abstracts International, and PsycLIT);
3. surveyed related literature;
4. identified additional variables;
5. wrote comprehensive review of related literature;
6. selected instruments;
7. compiled research proposal;
8. defended research proposal;
9. data were collected;
10. data were analyzed;
11. wrote final research report;
12. defended final research report; and
13. compiled final editing of the research project.

Data Analysis

The following were compiled:

1. appropriate descriptive statistics,
2. three-way analysis of variance (general linear model),

3. Bonferroni (Dunn) t -test for multiple comparisons of means, and
4. Duncan's multiple range test for means.

Results

The purpose of the researcher was to investigate attitudes toward physical activity and self-esteem of elementary school children. The independent variables investigated were gender, grade placement, and physical fitness. The dependent variables were scores from the Grade 3 CATPA, the Revised CATPA, and the school form of the CSEI. The sample consisted of 82 students in grades 3-5. Two composite null hypotheses were tested. Composite null hypothesis number one was tested using a $2 \times 3 \times 2$ factorial design. Scores from 5 subdomains of the Grade 3 CATPA and 7 subdomains of the Revised CATPA were used as dependent variables.

Composite null hypothesis number two was tested using a $2 \times 3 \times 2$ factorial design. Scores from each of the four subscales and total self score of the CSEI were used as dependent variables. A total of 91 comparisons were made. The results section was organized according to the composite null hypotheses for ease of reference. Information pertaining to each composite null hypothesis was presented in a common format for ease of comparison.

It was hypothesized in composite null hypothesis number one that the differences among mean children's attitudes toward physical activity scores for elementary school children according to gender, grade placement, and physical fitness will not be statistically significant. Table 1 contains information pertaining to composite null hypothesis number one. The following information was cited in Table 1: variables, group sizes, means, standard deviations, F values, and p values.

Table 1: A Comparison of Mean Children's Attitudes Toward Physical Activity Scores According to Gender, Grade Placement, and Physical Fitness Employing a Three-Way Analysis of Variance

Variable	n	M*	S	F Value	p Level
<u>Social Growth**</u>					
<u>Gender (A)</u>					
Boys	36	21.9	2.96	0.98	.3267
Girls	46	22.9	3.52		
<u>Grade Placement (B)</u>					
Third	29	23.1	2.47	0.88	.4191
Fourth	23	22.7	3.01		
Fifth	30	21.7	4.08		
<u>Physical Fitness (C)</u>					
Fit	28	21.9	2.99	0.54	.4653
Nonfit	54	22.8	3.45		
<u>Interactions</u>					
A x B				0.24	.7887
A x C				0.05	.8273
B x C				0.04	.9601
A x B x C				0.12	.8905

(continued)

Table 1 (continued)

Variable	n	M*	S	F Value	p Level
<u>Health and Fitness: Value</u>					
<u>Gender (A)</u>					
Boys	24	23.4	3.75	0.00	.9736
Girls	29	24.0	2.03		
<u>Grade Placement (B)</u>					
Fourth	23	24.4	1.53	1.34	.2538
Fifth	30	23.2	3.59		
<u>Physical Fitness (C)</u>					
Fit	19	24.2	1.74	0.15	.6983
Nonfit	34	23.5	3.41		
<u>Interactions</u>					
A x B				1.13	.2930
A x C				0.20	.6603
B x C				0.46	.4998
A x B x C				0.02	.8797

(continued)

Table 1 (continued)

Variable	n	M*	S	F Value	p Level
<u>Health and Fitness: Enjoyment</u>					
<u>Gender (A)</u>					
Boys	36	22.0	4.11	3.38	.0703
Girls	46	23.9	2.04		
<u>Grade Placement (B)</u>					
Third	29	24.5	2.05	2.94	.0595
Fourth	23	22.7	3.47		
Fifth	30	22.0	3.57		
<u>Physical Fitness (C)</u>					
Fit	28	23.8	2.09	3.08	.0834
Nonfit	54	22.7	3.65		
<u>Interactions</u>					
A x B				0.51	.6043
A x C				3.20	.0780
B x C				0.19	.8271
A x B x C				0.01	.9941

(continued)

Table 1 (continued)

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> Value	<u>p</u> Level
<u>Vertigo</u>					
<u>Gender (A)</u>					
Boys	36	19.5	5.25	1.09	.3004
Girls	46	17.9	4.81		
<u>Grade Placement (B)</u>					
Third	29	19.0	4.70	0.51	.6015
Fourth	23	18.5	4.40		
Fifth	30	18.3	5.89		
<u>Physical Fitness (C)</u>					
Fit	28	19.3	5.03	0.50	.4808
Nonfit	54	18.2	5.05		
<u>Interactions</u>					
A x B				0.38	.6845
A x C				0.53	.4676
B x C				0.06	.9405
A x B x C				0.46	.6327

(continued)

Table 1 (continued)

Variable	n	M*	S	F Value	p Level
<u>Social Continuation</u>					
<u>Gender (A)</u>					
Boys	36	23.1	2.99	0.03	.8609
Girls	46	22.7	4.33		
<u>Grade Placement (B)</u>					
Third	29	22.9	4.73	0.24	.7895
Fourth	23	22.7	3.96		
Fifth	30	22.8	2.55		
<u>Physical Fitness (C)</u>					
Fit	28	23.8	2.38	1.82	.1819
Nonfit	54	22.3	4.28		
<u>Interactions</u>					
A x B				0.46	.6323
A x C				0.35	.5541
B x C				0.52	.5973
A x B x C				0.88	.4186

(continued)

Table 1 (continued)

Variable	n	M*	S	F Value	p Level
<u>Aesthetic</u>					
<u>Gender (A)</u>					
Boys	36	16.7 ^a	6.97	4.11	.0464
Girls	46	20.3 ^b	5.07		
<u>Grade Placement (B)</u>					
Third	29	19.3	6.91	1.23	.2980
Fourth	23	20.0	4.13		
Fifth	30	17.2	6.65		
<u>Physical Fitness (C)</u>					
Fit	28	18.9	5.52	0.42	.5193
Nonfit	54	18.7	6.58		
<u>Interactions</u>					
A x B				0.29	.7457
A x C				0.44	.5093
B x C				0.08	.9188
A x B x C				2.07	.1337

(continued)

Table 1 (continued)

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> Value	<u>p</u> Level
<u>Catharsis</u>					
<u>Gender (A)</u>					
Boys	24	20.0	5.97	2.46	.1238
Girls	29	22.8	4.29		
<u>Grade Placement (B)</u>					
Fourth	23	22.4	4.86	0.33	.5712
Fifth	30	20.8	5.53		
<u>Physical Fitness (C)</u>					
Fit	19	21.4	4.99	0.45	.5056
Nonfit	34	21.6	5.48		
<u>Interactions</u>					
A x B				0.05	.8280
A x C				1.19	.2820
B x C				2.57	.1159
A x B x C				3.37	.0731

(continued)

Table 1 (continued)

Variable	n	M*	S	F Value	p Level
<u>Ascetic</u>					
<u>Gender (A)</u>					
Boys	24	16.5	7.22	1.37	.2473
Girls	29	18.8	5.39		
<u>Grade Placement (B)</u>					
Fourth	23	19.5	4.63	3.18	.0814
Fifth	30	16.4	7.16		
<u>Physical Fitness (C)</u>					
Fit	19	16.7	5.94	0.97	.3288
Nonfit	34	18.4	6.55		
<u>Interactions</u>					
A x B				0.30	.5862
A x C				0.32	.5737
B x C				0.39	.5369
A x B x C				0.02	.8777

*The larger the value, the greater the attitude

**The possible raw scores and the critical mean respectively were:
 Social Growth (5-25, 15); Health and Fitness: Value (5-25, 15); Health
 and Fitness: Enjoyment (5-25, 15); Vertigo (5-25, 15); Social
 Continuation (5-25; 15); Aesthetic (5-25; 15); Catharsis (5-25, 15);
 and Ascetic (5-25, 15).

^{ab}Difference statistically significant at the .05 level according to
 Bonferroni (Dunn) $\underline{t}$ test for means.

One of the 56 p values was statistically significant at the .05 level; therefore, the null hypothesis for this comparison was rejected. The statistically significant comparison was for the independent variable gender and the dependent variable Aesthetic. The results cited in Table 1 indicated that girls reported a significant higher mean score for Aesthetic than boys.

It was hypothesized in composite null hypothesis number two that the differences among mean self-esteem scores for elementary school children according to gender, grade placement, and physical fitness will not be statistically significant. Table 2 contains information pertaining to composite null hypothesis number two. The following information was cited in Table 2: variables, group sizes, means, standard deviations, F values, and p values.

Table 2: A Comparison of Mean Coopersmith Self-Esteem Inventory Scores According to Gender, Grade Placement, and Physical Fitness Employing a Three-Way Analysis of Variance

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> Value	<u>p</u> Level
<u>General Self**</u>					
<u>Gender (A)</u>					
Boys	36	16.9	5.78	0.77	.3828
Girls	46	18.0	4.30		
<u>Grade Placement (B)</u>					
Third	29	16.3	5.38	2.46	.0926
Fourth	23	18.7	4.39		
Fifth	30	17.9	1.26		
<u>Physical Fitness (C)</u>					
Fit	29	18.3	4.23	1.26	.2663
Nonfit	53	17.1	5.37		
<u>Interactions</u>					
A x B				0.51	.6032
A x C				0.01	.0926
B x C				0.43	.6495
A x B x C				4.24	.0183

(continued)

Table 2 (continued)

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> Value	<u>p</u> Level
<u>Social Self-Peers</u>					
<u>Gender (A)</u>					
Boys	36	5.4	2.33	0.00	.9786
Girls	46	5.3	1.69		
<u>Grade Placement (B)</u>					
Third	29	4.4 ^b	1.96	5.27	.0074
Fourth	23	5.7 ^a	2.03		
Fifth	30	5.8 ^a	1.72		
<u>Physical Fitness (C)</u>					
Fit	29	5.5	1.67	0.63	.4315
Nonfit	53	5.2	2.15		
<u>Interactions</u>					
A x B				2.33	.1045
A x C				0.49	.4845
B x C				0.68	.5099
A x B x C				3.63	.0315

(continued)

Table 2 (continued)

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> Value	<u>p</u> Level
<u>Home-Parents</u>					
<u>Gender (A)</u>					
Boys	36	5.6	1.82	0.01	.9214
Girls	46	5.5	2.09		
<u>Grade Placement (B)</u>					
Third	29	5.3 ^b	1.54	3.05	.0535
Fourth	23	6.4 ^a	1.65		
Fifth	30	5.1 ^b	2.37		
<u>Physical Fitness (C)</u>					
Fit	29	5.4	1.82	0.00	.9902
Nonfit	53	5.6	2.06		
<u>Interactions</u>					
A x B				3.06	.0530
A x C				0.50	.4820
B x C				0.15	.8639
A x B x C				1.29	.2807

(continued)

Table 2 (continued)

Variable	n	M*	S	F Value	p Level
<u>School-Academic</u>					
<u>Gender (A)</u>					
Boys	36	5.3	2.11	3.02	.0866
Girls	46	6.2	1.80		
<u>Grade Placement (B)</u>					
Third	29	5.7	2.13	0.70	.5006
Fourth	23	6.1	1.82		
Fifth	30	5.6	1.97		
<u>Physical Fitness (C)</u>					
Fit	29	6.0	1.69	1.12	.2937
Nonfit	53	5.7	2.12		
<u>Interactions</u>					
A x B				0.48	.6235
A x C				0.04	.8384
B x C				0.05	.9478
A x B x C				1.36	.2638

(continued)

Table 2 (continued)

Variable	n	M*	S	F Value	p Level
<u>Total Self Score</u>					
<u>Gender (A)</u>					
Boys	36	33.2	10.93	0.72	.3996
Girls	46	35.0	8.16		
<u>Grade Placement (B)</u>					
Third	29	31.7	9.50	2.74	.0718
Fourth	23	37.0	9.06		
Fifth	30	34.4	9.37		
<u>Physical Fitness (C)</u>					
Fit	29	35.2	8.09	1.00	.3212
Nonfit	53	33.6	10.16		
<u>Interactions</u>					
A x B				1.42	.2480
A x C				0.01	.9372
B x C				0.25	.7804
A x B x C				3.64	.0312

* The larger the value, the greater the attitude

** Possible raw scores for the five different scales were as follows:
General Self, 0-26; Social Self-Peers, 0-8; Home-Parents, 0-8;
School-Academic, 0-8; and Total Self Score, 0-50.

^{ab} Difference statistically significant at the .05 level according to Bonferroni (Dunn) $\pm$ test for means.

Six of the 35 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. Two of the 6 comparisons were for main effects and 4 for interactions. The two significant main effects were for the independent variable grade placement and the dependent variables Social Self-Peers and Home-Parents. The results cited in Table 2 indicated the following for main effects:

1. fourth and fifth graders reported higher Social Self-Peers mean scores than third graders; and
2. fourth graders reported higher Home-Parents mean scores than third and fifth graders.

The following interactions were statistically significant:

1. the interaction among gender, grade placement, and physical fitness for the dependent variable General Self;
2. the interaction among gender, grade placement, and physical fitness for the dependent variable Social Self-Peers;
3. the interaction between gender and grade placement for the dependent variable Home-Parents; and
4. the interaction among gender, grade placement, and physical fitness for the dependent variable Total Self.

The interaction among the independent variables gender, grade placement, and physical fitness for the dependent variable General Self was disordinal. The results cited in Figure 1 indicated the following:

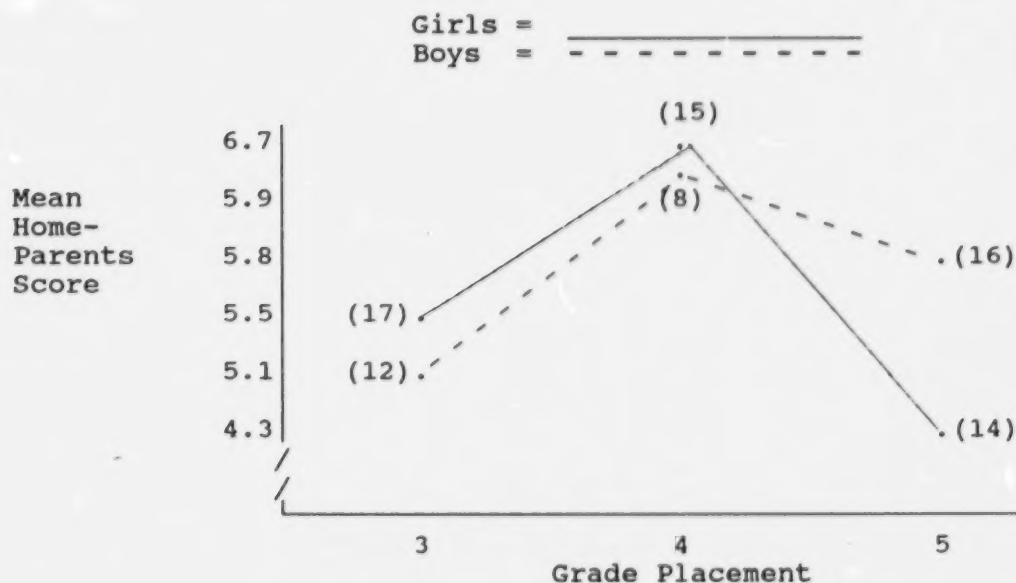
1. third grade girls (fit) and third grade boys (nonfit) had numerically the lowest mean scores of any subgroups; and
2. fourth grade girls (fit) and fifth grade girls (fit) had numerically the highest mean scores of any subgroups.

The interaction among gender, grade placement, and physical fitness for the dependent variable Social Self-Peers was depicted in a profile plot. The following were cited in Figure 2: mean Social Self-Peers scores and curves for gender and physical fitness.

1. third grade girls (fit) and third grade boys (nonfit) had numerically the lowest mean scores of any subgroups; and
2. fourth grade girls (fit) and fifth grade boys (fit) had numerically the highest mean scores of any subgroups.

The interaction between gender and grade placement for the dependent variable Home-Parents was depicted in a profile plot. Figure 3 contains mean Home-Parents scores and curves for gender.

Figure 3: Interaction Between the Independent Variables Gender and Grade Placement for the Dependent Variable Home-Parents



The interaction between gender and grade placement for the dependent variable Home-Parents was disordinal. The results cited in Figure 3 indicated the following:

1. third grade boys and fifth grade girls had numerically the lowest mean Home-Parents scores of any subgroups; and
2. fourth grade girls and boys had numerically the highest mean Home-Parents scores of any subgroups.

The interaction among gender, grade placement, and physical fitness for the dependent variable Total Self was depicted in a profile plot. The following were cited in Figure 4.

1. third grade girls (fit) and third grade boys (nonfit) had numerically the lowest mean scores of any subgroups; and
2. fourth grade girls (fit) and fourth grade girls (nonfit) had numerically the highest mean scores of any subgroups.

Discussion

Summary

The purpose of the researcher was to investigate attitudes toward physical activity and self-esteem of elementary school children. The independent variables investigated were gender, grade placement, and physical fitness. The dependent variables were scores from the Grade 3 CATPA, the Revised CATPA, and the school form of the CSEI. The sample consisted of 82 students in grades 3-5. Two composite null hypotheses were tested at the .05 level employing a three-way analysis of variance (general linear model).

A total of 91 comparisons were made. Of the 91 comparisons, 39 were for main effects and 52 were for interactions. Of the 39 comparisons for main effects, 3 were statistically significant at the .05 level. The following main effects were statistically significant:

1. the independent variable gender for the dependent variable Aesthetic;

2. the independent variable grade placement for the dependent variable Social Self-Peers; and
3. the independent variable grade placement for the dependent variable Home-Parents.

The results for the main effect indicated the following:

1. girls had a higher mean score than boys for Aesthetic;
2. fourth and fifth graders reported higher Social Self-Peers mean scores than third graders; and
3. fourth graders reported higher Home-Parents mean scores than third and fifth graders.

Of the 52 interactions, 4 were statistically significant at the .05 level. The following interactions were statistically significant:

1. the interaction among gender, grade placement, and physical fitness for the dependent variable General Self;
2. the interaction among gender, grade placement, and physical fitness for the dependent variable Social Self-Peers;
3. the interaction between gender and grade placement for the dependent variable Home-Parents; and
4. the interaction among gender, grade placement, and physical fitness for the dependent variable Total Self.

Related Literature and Results of the Present Study

The results of the present study indicated that girls reported a more positive attitude toward Aesthetic than boys. This finding supported that reported by Politino and Smith (1989). The results of the present study did not support the findings reported by Hardin (1991). He reported no significant differences in attitudes toward physical activity based on gender.

The results of the present study indicated no association between physical fitness and attitudes toward physical activity. This finding did not support the results reported by Sherrill, Holguin, and Caywood (1989) who indicated that girls more fit had higher positive attitude toward physical activity scores than lower fit boys.

The results of the present study indicated an association between physical fitness and self-esteem. This finding did not support the results reported by Christian (1969), Leonardson and Gargiulo (1978), Teagardin (1983), Folsom-Meek (1991), and Neale, Sonstroem, and Metz (1969). The results of the present study did support the studies review by Doan and Scherman (1987), who reported an association between physical fitness and psychological variables.

The results of the present study indicated that fourth and fifth graders reported higher Social Self-Peers and Home-Parent scores than third graders. The results of the present study did not support those reported by Martinek, Cheffers, and Zaichkowsky (1978) who indicated significantly lower self-concept scores for students in grades 3, 4, and 5 than grade 2.

Generalizations

The results of the present study appeared to support the following generalizations:

1. girls reported a more positive attitude toward Aesthetic than boys;
2. fourth and fifth graders reported higher Social Self-Peer scores than third graders;
3. fourth graders reported higher Home-Parent scores than third and fifth graders;
4. statistically significant interactions among gender, grade placement, and physical fitness for General Self; among gender, grade placement, and physical fitness for Social Self-Peers; between gender and grade placement for Home-Parents; and among gender, grade placement, and physical fitness for Total Self;
5. no association between physical fitness and attitudes toward physical activity; and

6. no association between grade placement and attitudes toward physical activity.

Recommendations

The results of the present study appeared to support the following recommendations:

1. the study should be replicated with a large random sample;
2. the study should be replicated in school districts of different sizes; and
3. the study should be replicated in school districts in different geographic locations.

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Appendix A
Instruction Sheet - Grade 3 CATPA

Instructions

Each of you has a questionnaire, please leave it face down in front of you. Place your pencil beside the questionnaire and listen very carefully.

I want to know how you feel about physical activity. Physical activities are sports, games, and dancing, such as soccer, tag, square dancing, and roller skating.

In order for us to find out how you feel about physical activity, I want you to answer six questions about physical activity according to how you feel about each question. This is not a test. There are no right or wrong answers. This is how you will answer the questions. First I will read the question out loud as you read it quietly to yourself. For example, take this questions which is not one of the six in your questionnaire:

How do you feel about referees?

Does everyone know what a referee is? Below each question are some happy faces and some sad faces. (Refer to visual aid) After reading the question, if you feel really happy about it then you would mark a check through the happiest face (Point). If you feel happy but not really happy you would mark a check through this face (Point). If instead you felt really sad, then you would mark a check through the saddest face (Point). If you felt sad but not really sad you would mark a check through this

face (Point). If you felt neither happy nor sad, you would mark a check through the race in the middle. If you do not understand the question do not mark a check through any of the faces. Instead, put a "/" above "I do not understand." After you have marked your answer wait until I read the next question before you go on.

Remember, this is not a test. Make sure you answer according to how you feel and not to how the person next to you answers the question. Also, do not think too long about the question and your answer. Just mark down the first thing you feel. Don't go back to a question after you have finished it. When you have finished all of the questions put your pencil down and turn the questionnaire over. Are there any questions?

If you have any questions while you are filling in the questionnaire, just raise your hand and I will come and help you. Now, turn your pages over and we will begin.

Appendix B
Instruction Sheet - Children's Attitudes
Toward Physical Activity

Instructions

This questionnaire is designed to find out how you feel about physical activity. Physical activities are games, sports, and dance such as tag, soccer, hockey, square dancing, and roller skating.

Each one of you has a booklet. Do not open it yet. Please listen carefully to the instructions. (Refer to visual aid).

At the top of each page in your booklet there is a box, and in the box there is an idea. Down below the box are five different pairs of words. You will be marking these word pairs to show how you feel about the idea. This is not a test, so there are no right or wrong answers. Read the idea in the box, for example, REFEREE. Now go down to the first pair words--Good-Bad. How do you feel about Referees? If you think they are very good, you would put a "/" here (mark at the end of the scale by good) or, if you think that they are very bad, you would put a "/" here (mark at the end of the scale by bad). If you think that referees are pretty good but not super good you would put a "/" here (indicate) or if you thought that referees were sort of bad but not really bad you would put a "/" here (indicate). If you think that referees are neither good nor bad (i.e., a neutral feeling) then put a "/" in the middle. If you do not understand the idea in the box put a

"/" in the *do not understand* box on the middle of the page. Then go to the next page. If you understand the idea in the box but not the word pair, leave the word pair line blank and go on to the next word pair. Do you have any questions?

It is important for you to remember several things. First of all, put you "/" right in the middle of the space--not on top of the dots. Second, there are five pairs of words on each page, so how many "/"'s will you have on each page? (Five).

When I tell you to begin, go through the booklet page by page. Read the idea in the box at the top of the page and fill in how you feel about all of the word pairs before you go on to the next page. Don't go back to a page after you have finished it; and don't try to remember how you answered the other pages. Think about each word pair by itself. As you go through the booklet go fairly quickly; don't worry or think too long about any word pair. Mark the first thing that comes into your mind, but don't be careless. Remember, the idea in the box at the top of each page is a new idea, so think only about that idea. When you are all finished, put down your pencil and go back through the booklet to make sure that you haven't left anything out by mistake. After you have finished checking, turn your booklet over and wait until everyone is finished.

If you have any questions raise your hand and I will come around and help you. You may begin.

Appendix C

Letter from Mr. Gregg Pennington

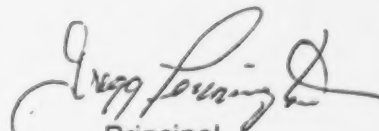
OTIS-BISON U.S.D. NO. 403
INTERMEDIATE SCHOOL
OTIS, KANSAS 67565

TELEPHONE
(913) 387-2371

May 13, 1993

Dear Stan;

You have permission to administer three inventories to students at Otis Intermediate starting May 17, 1993. It is my understanding that the information from the inventories will be used as a part of a thesis to be completed at Fort Hays State University.


Principal

Appendix D
Permission to Take Part in Study

OTIS-BISON U.S.D. NO. 403
INTERMEDIATE SCHOOL
OTIS, KANSAS 67565

TELEPHONE
(913) 387-2371

May 11, 1993

Dear Parent,

A research study is being conducted at Otis Intermediate by Mr. Stan Ewy in partial fulfillment of the requirements for a masters degree in education. The study will seek to investigate attitudes toward physical activity and self-esteem. We would like to ask permission for your child to participate in this study.

All third, fourth, and fifth grade students will be asked to participate in the study. They will be asked to complete an attitudes toward physical activity inventory and a self-esteem inventory. The data collected will be correlated with physical fitness scores, gender, and grade classification. This will be done in the safety of the classroom. No names will be recorded in this study thus ensuring the confidentiality of the students. We hope to have as large a sample as possible.

Please feel free to contact Mr. Stan Ewy at (913) 387-4661 (school) or (913) 356-2994 (home) if you have any questions concerning the study. Please sign, clip, and return the lower part of this page by May 14, 1993. Thank you for your support in this endeavor!

Sincerely,

Stan R. Ewy

Stan R. Ewy
Physical Education Instructor

Permission Slip

I give permission for my child, _____ to participate in the research project on attitudes toward physical activity and self-esteem.

Parent or Guardian _____ Date _____